

REMARKS

Upon receipt of this response, the Examiner is respectfully requested to contact the undersigned representative of the Applicant to arrange a telephone interview concerning the inventive merits of this application.

The Applicant draws the Examiner's attention to the fact that the corresponding European Patent was recently allowed as EP 1 585 591 B1 and a copy of this patent was previously sent for consideration by the Examiner. New independent claim 42 is analogous to allowed independent claim 1 of this European Patent.

The specification is objected to for the reasons noted in the official action. The above requested specification amendments are believed to overcome all of the raised informalities concerning this case. If any further amendment to the specification is believed necessary, the Examiner is invited to contact the undersigned representative of the Applicant to discuss the same. The above amended paragraphs of the specification overcome some informalities noted in the specification on file. The undersigned avers that the amended paragraphs of the specification do not contain any new subject matter as ample basis for these amendments can be found, for example, in paragraphs [090] and [091] of the original specification.

Before discussing the raised rejections, the Applicant would like to summarize the inventive aspects of presently claimed reaction container. A first aspect is the baffles, as presently claimed, which are believed to be distinctly different from the baffles of the cited references in view of a number of distinctive features which are recited above and discussed below. In particular, each baffle *only has one single local connection* which is affixed to the inner wall of the container. The greatest dimension of the single local connection for each baffle is less than the length of the baffle. This single local connection spaces the baffle at a suitable distance, but not too far, away from the inner wall of the container. The internal wall of the container, the single local connection and each baffle are glass lined so as to form a group of glass lined surfaces. The baffles along with their single local connection generally only have rounded edges and angles—there are not any sharp edges or surfaces. The baffles are secured or attached to a single respective local connection, which is coupled to the respective baffle approximately along a central portion of the length of the baffle.

The above noted features have a number of benefits over the cited references and the prior art in general. By affixing each baffle to the interior wall of the container by only a single local connection, this helps overcome difficulties with the behavior of the enamel

coating caused by harmful thermal dilations and thus assists with maintaining the integrity of the enamel layer during use. The single local connection also enables a greater freedom of design with regard to overall form and shape of the baffle such that improvements of the effectiveness of mixing and thermal transfer are achieved.

Spacing the baffles, a distance from the internal wall of the container, by use of the single local connection also can improve agitation of the medium being mixed within the container by inducing additional and/or desired turbulence. Also the space between each baffle and the interior surface of the container along with providing each baffle with smooth exterior surfaces help prevent the formation of eddy currents, swirls and/or vortexes within the agitated medium. In addition, as the inventive baffles are not bolted or fixed on nozzles (apertures for the pipes), like prior art solutions, and thanks to other claimed features, it is now possible to install a greater number of baffles in the reaction container and to have all of the nozzles available for connecting of all kinds of pipes needed for the chemical process. Further, the possibility of accumulating matter, between the baffle and the wall, is reduced because the space between the baffles and the interior wall creates a suitable passage for the medium to pass therethrough. Since the baffle is secured and held at suitable distance away from the interior wall, there generally is not any inaccessible region(s), near the single local connection, and this generally simplifies the task of cleaning the interior of the container, when necessary.

An important aspect of both the baffle and its single local connection is that those components only have rounded edges and surfaces angles since they minimize the difficulties of enameling the necessary surfaces and thereby avoids sharp edges and surfaces which are much more prone to peel or become damaged during normal use of the container.

Further benefits of the presently claimed baffles is that they facilitate installation of a greater number of baffles within the container; the size of the baffle is not limited by the pipe aperture diameter; an increased behavior of the enamel coating during the use of the glass-lined container and during the glass-lined coating process as there generally is not any breaks in the enamel coating due to thermal expansion; the baffles are more easily enameled; the enamel coating of the baffle resists stress due to thermal expansion; a gasket between the baffle and the adjacent internal wall of the container is unnecessary; and the baffle is more easily equipped with a circulating system for the fluid.

Thanks to the inventive features of the presently claimed invention, it is unnecessary to use gaskets, which are always a weak point with regard to the risks of leaking and corrosion and baffles having gaskets typically become loose over time. According to the inventive container, all the surfaces are glass lined and therefore are capable of resisting highly corrosive conditions and environments. It is respectfully submitted that the references applied below suffer from many of the drawbacks discussed above and fail to in any way teach, suggest, disclose or remotely hint at the above noted and inventive features.

Turning now to the applied art, claims 21, 22, 26, 34, 35, 37 and 38 are rejected, under 35 U.S.C. § 102(b), as being anticipated by EP 1208905 A2 ("EP '905"). The Applicant acknowledges and respectfully traverses the raised anticipatory rejection in view of the following remarks.

EP '905 relates to and teaches an agitation vessel used to produce a suspension of solids. The vessel 10 comprises a tank 1 having sidewalls 3 to which a number of baffles 7 are connected. As best shown in Fig. 1, each baffle is connected to the tank 1 by *two* supports—not a single support as with the presently claimed invention. Furthermore, the ends of the baffles are connected to the container, *not* centrally along the length of the baffle as is claimed. Each of these two supports is connected to the baffle by a number of screws, rivets or nuts and bolts. These types of connections as well as the baffles could be coated by painting, however, it is respectfully submitted that such components are generally not suitable for glass lining.

Fig. 1 of EP '905 shows the baffles and the supports as being rectangular. Although the shape or form of the edges along the length of the baffles is not disclosed, the angles between the horizontal (top and bottom) and vertical (lengthwise) surfaces is clearly 90° thereby forming sharp angles and the same is true of the two connections for each baffle. The bolts, screws and/or nuts, used to connect the baffles 7 to the supports, also have a number of sharp edges and angular zones. Furthermore, the supports have two parallel edges that form sharp angles and connections between the supports and the baffles 7. As noted above, such sharp angles, edges and connections are much more prone to be damaged by material mixing within the container.

Contrary to the presently claimed invention, EP '905 specifically teaches the baffle as having *two* local connections whereas the pending claims recite that each baffle has only one single local connection by which the baffle is connected to the interior of the container. With

two supports and without gaskets for each support, it is respectfully submitted that the teachings of EP `905 is more likely to result in cracks, chips, breaks and/or peeling in the enamel coating because it is impossible for such elements to thermally expand and contract without eventually causing damage.

Next, the Examiner contends that EP `905 at [0025] discloses a baffle which is glass lined. The Applicant respectfully avers that EP `905 proposes the equipment has a coating. It is to be appreciated that glass lining is *not* a simple single coating, but a new composite material. It is respectfully submitted that the baffles and the local connections, of EP `905, can not be efficiently glass lined because they have sharp edges and angular zones as well as bolts, screws and/or nuts that can not easily, effectively and/or efficiently be glass lined so as to withstand harsh environments. As the baffles taught by of EP `905 are connected to the container by *two* separate supports, the thermal expansion during the manufacturing processes for which the equipment is designed will normally create stresses which may result in damage of the glass lined steel. It is respectfully submitted that these aspects of EP `905 are contrary to the presently claimed invention.

Next, claims 21, 22, 26, 34, 35, 37 and 38 are rejected, under 35 U.S.C. § 102, as being anticipated by EP 1172138 A1 ("EP `138"). The Applicant acknowledges and respectfully traverses the raised anticipatory rejection in view of the following remarks.

EP `138 relates to and teaches a reactor with a heat exchanger and includes a container top 2. Fig. 2 of EP `138 shows an annular intermediate unit 3 sandwiched between and coupled to the reactor 1 and the top 2 by a number of bolts 9. The annular intermediate unit 3 includes a number of heat exchanger plates 5 each of which are coupled at their base to a circular conduit 6 and at their top to straight conduit 4. The top conduit 4 of each exchanger plate 5 extends into the annular intermediate unit 3 and leads to an inlet and outlet 7, 8.

It is respectfully submitted that the heat exchangers 5, taught by EP `138, are distinct from the presently claimed baffles. It is respectfully submitted that these heat exchangers 5 are not baffles at all as they serve a completely different purpose and function than the presently claimed baffles. That is, the heat exchangers 5 of EP `138 transfer heat between the fluid flowing in and out of the container by way of the inlet and the outlet 7, 8. One could possibly argue that EP `138 teaches a unit 10 for possibly agitating the fluid inside the container, however, the Applicant respectfully asserts, in view of Fig. 2, that the heat

exchangers 5 only exchange heat and are not provided for the purpose of agitating or mixing the fluid within the container. The heat exchangers 5 are shown to be secured extremely close together, especially on the radially interior side, such that any fluid located within the container would not flow between them and would not be mixed therefrom.

The heat exchanger 5 plates of EP `138 are connected to an annular intermediate unit 3 that is then coupled to the upper and lower portions of the container 1, 2 by way of a number of bolts 9 and 2 gaskets 15. The heat exchangers 5 are *not* secured to the internal lateral wall but instead are connected to an annular support unit 3 which, in turn, is supported by the upper end of the later wall. Further, the Applicant asserts that EP `138 does *not* teach *a single local connection which affixes the baffle to the interior wall of the container*, as presently claimed. It is respectfully submitted that this feature, at the very least, is in direct contrast to the presently pending claims which require the baffle and the interior wall of the container to be coupled to one another by only a single local connection.

Furthermore, the hollow heat exchangers 5 of EP `138 are linked together and, it is respectfully submitted that, the link 6 between them is too bulky for the use of large impeller blades. In addition, as can best be seen in Fig. 3 of EP `103, the hollow heat exchangers 5 are not only supported by two connections, which are connected to an inner surface of the annular intermediate unit 3, but they are all also supported by a circular conduit 6, which is contrary to the presently claimed invention.

In contrast to both EP `905 and EP `138, the presently claimed invention includes the inventive limitations of only a single local connection, the baffle and the local connection each having rounded edges and angles and the baffle, the local connection and the interior wall of the container together form a group of glass lined surfaces.

In order to emphasize the above noted distinctions between the presently claimed invention and the applied art, independent claim 21 of this application now recite the features of "[a] baffle secured to a *glass-lined internal wall of a container*, the baffle being secured to and held at a distance from an adjacent internal wall (12) of the container (1) . . . by a single local connection (15) . . . the baffle and the local connection have *only rounded edges and angles*, and an external surface of the baffle and an external surface of the local connection are glass-lined forming a *group of glass-lined surfaces* with the internal lateral surface of the container".

Independent claim 42 of this application now recites the features of “[a] glass lined reactor with one or more baffles secured to an internal glass lined wall of the reactor which is capable of being equipped with a thermal fluid circulation system, wherein each baffle is connected to the reactor internal wall (12), at a distance from the internal wall (12), by a local connection (15) whose greatest dimension is shorter than a length of each baffle, external surfaces of the baffle body and the corresponding local connection are glass lined, and the local connection enables each baffle to be substantially insensitive to expansion of a remainder of the reactor and form a group of glass lined surfaces with an internal lateral surface of the reactor”. Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art.

Claims 25, 28, 29 and 32-33 are then rejected, under 35 U.S.C. § 103(a), as being unpatentable over EP `905 or EP `138 in view of any one of DE 19723977 A1, Nocera `368 (U.S. Patent No. 3,265,368) or Kropp et al. `870 (U.S. Patent No. 3,334,870). Claim 36 is likewise rejected over EP `905 in view of MacLean `856 (U.S. Patent No. 2,159,856). Claims 39-40 are likewise rejected over EP `905 or EP `138 in view of any one of Cowley `262 (U.S. Patent No. 4,276,262) or Baker et al. `962 (U.S. Patent No. 5,632,962). Claim 41 is likewise rejected over EP `905 or EP `138 in view of any one of Kirby et al. `627 (U.S. Patent No. 4,457,627) or Smith, Jr. et al. `900 (U.S. Patent No. 4,150,900). The Applicant acknowledges and respectfully traverses all of these additional raised obviousness rejections in view of the above amendments and the following remarks.

The Applicant acknowledges that the additional references of DE 19723977 A1, Nocera `368, Kropp et al. `870, MacLean `856, Cowley `262, Baker et al. `962, Kirby et al. `627 and Smith, Jr. et al. `900 may arguably relate to the features indicated by the Examiner in the official action. Nevertheless, the Applicant respectfully submits that the combination of the base reference of EP `905 or EP `138 with this additional art of DE 19723977 A1, Nocera `368, Kropp et al. `870, MacLean `856, Cowley `262, Baker et al. `962, Kirby et al. `627 and/or Smith, Jr. et al. `900 still fails to in any way teach, suggest or disclose the above distinguishing features of the presently claimed invention. As such, all of the raised rejections should be withdrawn at this time in view of the above amendments and remarks.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

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In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejections should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejections or applicability of the EP 1208905 A2, EP 1172138 A1, DE 19723977 A1, Nocera '368, Kropp et al. '870, MacLean '856, Cowley '262, Baker et al. '962, Kirby et al. '627 and/or Smith, Jr. et al. '900 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejections should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



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